AN EMERGENCY FLOATATION JACKET

This application claims priority of Provisional Application No. 60/423,442, filed 11/04/02

TECHNICAL FIELD

This invention provides a comfortable jacket that incorporates an emergency floatation means.

BACKGROUND ART

Newspapers and television often tell us of boating accidents and very small children who drown in a backyard swimming pool. Some pools have expensive alarm devices that sound when their pool surface is disturbed in hopes of preventing such tragedies. This invention provides a low cost practical emergency floatation system for children and adults in emergency deep-water emersion situations.

There are many forms of swimming pool toys and life jackets that provide floatation means in swimming pools, ponds, lakes, and other water bodies; some of them are made as attachable life jackets or arm floats and others are simply rings or floats in many forms. Various pool alarms also exist.

While they may provide emergency floatation for an adult or child, the means must be within their grasp when the person enters or falls into the potentially dangerous body of water. There is no assurance that this can or will be the possible at such a hazardous time, either in pools or in open bodies of water. The constant need for a safe alternative presents a difficulty because of the variety of children's play and adult activities, and the unexpected times an emergency may occur. What can they, or will they, wear in both situations. Something is needed that can be worn in water recreation activity, and in common activities

such as playing and napping or sleeping, and will provide standby floatation means. Such a device is not presently available.

The aforementioned alarms provided for swimming pools and life belts that have been available for many wearers are all expensive and do not satisfy the constant needs fitting small children's needs or many adult activities requiring water safety.

The following invention provides all of these needs.

DISCLOSURE OF THE INVENTION

This invention is not a toy but a device designed to meet the needs of such an emergency and prevent the drowning of a child or adult. It allows the wearer to play, nap or sleep while maintaining a *minimum* floatation capability. It requires no mechanism other than its inherent hydraulically activated pneumatic float response.

A lightweight ventilated plastic jacket having in its design upper reservoirs of air suitable for head floatation that are positioned along its upper edge and are connected by air transfer tubes to similar reservoirs of air located at its lower edge. Its contained volume of air is only enough to fill the upper float-reservoirs. Contained air is free to transfer among the reservoirs. This device has the property that when immersed upright in a volume of water, the unequal water pressure will force the air in the lower reservoirs up into the upper reservoirs. The upper reservoirs are positioned to act as potential floats for the wearer's head and face.

If the total volume of air within the device is equal only to the volume of the upper float reservoir, the water immersion in upright orientation will force all contained air from the lower reservoirs to the upper ones. A jacket having only the total volume of air required to fill the upper float reservoir (say, one half its total capacity), when not immersed in water, will also freely allow the air to migrate to other reservoirs when any one reservoir is pressed flat. Under these conditions, the jacket will have little weight, no resistance to parts of it being

locally pressed flat, and in general not interfere with the actions of the child or adult wearing it, or even sleeping in it.

In an emergency, when a person wearing it falls into a body of water, their initial position is upside-down but their natural distribution of body weight will lower their legs and elevate their head. At this time, the air in the lower reservoirs is hydraulically squeezed up into the upper float reservoirs. This provides floatation for the head and face. In such floatation, a rule of thumb is that 1/4 body weight for the water weight displacement will support a person's head even when their body weight is 4 times that weight.. Therefore, a volume of air displacing 8 pounds of water can float a 32-pound person's head in a breathable elevation above the water's surface.

The aforesaid jacket is designed to minimize body covering to provide cool wearing during hot weather. It also can have a back fastening means, and a bottom between-the-legs strap that also fastens at the jacket back, and can be used to maximize its secure attachment for children. Adults simply need a front fastening jacket.

A BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 diagrams the hydraulic and pneumatic principals that the invention utilizes.

Figure 2 is a two- dimensional representation (opened and flattened) of a typical configuration of the invention.

Figure 3 is a perspective drawing of the Playable Emergency Floatation Jacket.

BEST MODE FOR CARRYING OUT THE INVENTION

Figure 1 has four diagrams marked A through D. View A represents a face on view of a pair of reservoirs where the upper one is termed a float 10 and the lower one is termed a reservoir 22. Views B through D represent the same pairs

but from a sideward aspect. Pair B depicts them in an air environment and the upper float 10 as pressed flat so that its volume is transferred via the air transfer tube to the lower reservoir 22, Pair C represents the condition of B after immersion in water to the water lever 34 as shown. It may be seen that the hydraulic pressure of the water has forced the lower reservoir 22 air through the air transfer tube 18 into the now upper float 10. View D again is an air environment where the pair 10 and 22 has equal volume. These A through D diagrams illustrate the arbitrary interchangeability of the internal air volume except when the pair is in a water immersion (C) where one reservoir 22 is elevated with relation to the other.

Figure 2 is a two- dimensional representation of a jacket (opened and flattened) showing a typical configuration of the invention to simplify understanding. Basically the construction (as seen in Fig. 3 also) consists of two primary parts that are the airtight backing support material 16 bonded to the airtight covering material 26 in which there are ventilation scrim 12 areas and float/reservoirs 10, 20, 22, 24 contain captured air volumes and have air tube interconnecting means 18. Designed to consider the upper and lower relations of the human body the jacket has an upper front collar float 10 and two additional collar floats 20 located adjacent the upper side fastening edges. Two front reservoirs 22 and two back reservoirs 24 are located at its lower edge. These reservoirs are the upper floats 10, 20 and are connected to the lower reservoirs 22, 24 by various air transfer tubes 18 that also interconnect the lower reservoirs 22, 24. Reservoirs 22, 24 have partial center seams to minimize bellowing when inflated. The upper floats 10, 20 are designed so the entering air transfer tubes 18, connecting the lower reservoirs 22, 24, are carried to the upper area of the floats 10, 20. This is to minimize exiting air transfer incase of wearer inversion in water. Two above-the-arm straps 36 are shown wherein one end is integral and the other end fastened during manufacture thus forming a jacket when the two hems, H1 and H2 are joined to the top front of the jacket at H1 and H2 respectively.

In addition, Fig. 2, has crosshatched areas that indicate ventilating scrim 12. In the lower part of the jacket, two elastic vent scrims 28 help to adjust the

jacket fit to the person's body. The jacket is designed to provide a front or back fastener means 14 for closure. This later provides an inaccessible fastener so the children cannot remove it themselves. Where deemed necessary for very small children, a between-the-legs strap 30 and fastener 32 may also be utilized.

Figure 3 is a clarifying perspective drawing of the assembled Emergency Floatation Jacket shown without an occupant. All numbers are the same references as Fig. 2. The front reservoirs 22 are shown fully inflated to aid understanding of their construction. Normally they might be partially or completely flat. The front collar 10 is shown as essentially flat with little air.

It is contemplated, but not shown, that one or more matching external items of clothing may be desirable for use with the playable jacket. This would allow extra abrasion and wear protection, choice of colors and a second washable item while one item is being worn.

While the invention has been described in complete detail and pictorially shown in the accompanying drawings, it is not to be limited to such detail, since many changes and modifications may be made in the invention without departing from the spirit and scope thereof.